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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/710,513 | 07/16/2004 | Georgios L. Varsamis | SSW001 | 4512 |
| 23444 7590 12/28/2007 ANDREWS & KURTH, L.L.P. 600 TRAVIS, SUITE 4200 HOUSTON, TX 77002 | | | | |
| | | | EXAMINER HUGHES, SCOTT A | |
| | | | ART UNIT 3663 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/710,513

Applicant(s)

VARSAMIS ET AL.

Examiner

Scott A. Hughes

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 114-120 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 114-120 is/are rejected.
- 7) ☒ Claim(s) 114-120 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/19/2007 has been entered.

Response to Arguments

Applicant's arguments with respect to the newly filed claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to the DC pathway in combination with the bucket brigade arrangement of pods is not persuasive. The use of DC pathways and chokes in communication pathways is known in the prior art, and it would be obvious to modify the Zimmer reference to include a DC pathway as described in the rejections presented below.

Claim Objections

Claims 114-120 are objected to because of the following informalities: The claims use the limitation "choke (106)" but the specification refers to element 106 as an inductor and not a choke. It is requested that applicant use "inductor" for element 106 as is done in the specification for the same element in the claim language in order to have consistent terminology. As there is support only for the term "inductor" and not for

the term "choke," the term "inductor" is requested to be used. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 114 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer (5157392) in view of Downey.

With regard to claim 114, Zimmer discloses a sensor array 15 (Fig. 1) (abstract). Zimmer discloses first and second sensor pods 15 each characterized by having a sensor 36,37 therein operatively coupled to a multiple-bit memory 31 structured for storing data therefrom (Fig. 1) (Column 4, Line 23 to Column 5, Line 2; Column 6). Zimmer discloses a processor (CPU) operatively coupled to the memory (Fig. 1) (Column 4, Line 23 to Column 5, Line 2; Column 6). Zimmer discloses a first node in bidirectional communication with the memory 31 (node of connection between telemetry unit and memory) (Fig. 1) (Column 4). Zimmer discloses a telemetry and control module 10 (Fig. 1) (Column 4). Zimmer discloses a first cable 27 connected between the telemetry and control module and the first sensor pod (Fig. 1), said cable including an electrical conductor connected between the telemetry control module and the first node of the first sensor pod (Fig. 1). Zimmer discloses a second cable 27 connected between the first sensor pod and the second sensor pod, the second cable including an

electrical conductor (Fig. 1) (Columns 7-8). Zimmer discloses a first signal path between the telemetry control module and the memory of the first sensor pod, including the electrical conductor of the first cable, and a first node of the first sensor pod (Fig. 1) (Column 4, Line 18 to Column 5, Line 2; Columns 7-9). Zimmer discloses a second signal path disposed between the memory of the first sensor pod and the memory of the second sensor pod (communication path that allows for data from second memory to be transferred up to the main control and recording unit) (Fig. 1) (Column 4, Line 18 to Column 5, Line 2; Columns 7-9).

Zimmer does not disclose a first communication converter or a second node in bi-directional communication with the memory via a second communications converter, and a choke electrically connected between the first node and the second node. Downey teaches a bi-directional communication system using bi-directional communication interfaces (nodes) to communicate between a series of slave units (corresponding to the sensor pods in Zimmer) and a master control unit and recording unit (abstract; Fig. 1). Downey teaches using first and second nodes and communications converters between the slave units, and teaches using a choke 41,43 in between the first and second nodes (first and second nodes are the upstream and downstream bi-directional communication nodes between units) (Figs. 1, 6) (abstract; Column 3, Line 12 to Column 4, Line 54; Column 7). Downey teaches using conductors between the nodes and communications converters and of the different serially connected units as communication pathways between the main recording device and each slave device (Figs. 1, 6) (abstract; Column 3, Line 12 to Column 4, Line 54;

Column 7). It would have been obvious to modify Zimmer to include first and second interface nodes and communications converters connected to the memory of the sensor pods as part of the communication paths as taught by Downey in order to be able to send coded commands from a master control unit to each of the sensor pods and to be able to send data and other information signals from the pods to the master recording and control unit. It would have been obvious to modify Zimmer to use a choke between the nodes of each device as taught by Downey in order to provide dc power to each of the pods and to isolate the power from the command and data signals being sent between the units.

Zimmer does not disclose a direct current power pathway disposed between the telemetry and control module and the first and second sensor pods. Downey teaches that the conductors and chokes connecting the main and slave units provide a direct current power pathway between the devices that allows for the main unit to power the electronics of the slave units (Column 3). Downey teaches a direct current power pathway disposed between a telemetry and control module 20 and first and second sensor stations 40 (slave units that correspond to the sensor pods of Zimmer) including a conductor of a first cable 36, the first node of the first sensor, the choke 43 of the first sensor pod, the second node of the first sensor station, the conductor 36 of a second cable connecting to the second sensor station, the first node of the second sensor station, the choke 43 of the second sensor station, and the second node of the second sensor station (nodes are the input and output interfaces of the slave units that allow for communications to travel in directions of from the master to the slaves and from the

slaves to the master) (Figs. 1, 6) (Column 3, Line 13 to Column 4, Line 54). It would have been obvious to modify Zimmer to include the direct current power pathway in the conductors cables between the sensor pods, including the interfaces and chokes in each unit, as taught by Downey in order to have a way to provide power to the electronics of the sensor pods while allowing for separation of the power and command and data signals along the conductor.

Claims 115-117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer (5157392) in view of Downey as applied to claim 114 above, and further in view of Endo (6630890).

With regard to claim 115, Zimmer does not disclose simultaneously transferring data. Endo teaches that a plurality of sensor pods is arranged to simultaneously transfer first data from the memory to the first telemetric communications interface and second data from the second telemetric communications interface (similar to the bidirectional interfaces disclosed by Downey) to the memory (Figs. 2-6) (abstract; Column 4, Line 30 to Column 6, Line 65; Column 7, Line 28 to Column 8, Line 50). It would have been obvious to modify Zimmer to include simultaneously transferring the data as taught by Endo so that the data is continuously transmitted and the timing between pulses is not interrupted.

With regard to claims 116, Zimmer discloses first pod data disposed in the memory of the first of the plurality at a first point in time, second pod data disposed in the memory of the second of the plurality at a first point in time, said first pod data

disposed in a memory element of the telemetry and control module at a second point in time after the first point in time (Column 5, Line 54 to Column 8, Line 15). Zimmer does not disclose and said second pod data disposed in the memory of the first of the plurality at a second point in time. Zimmer does not specifically disclose that the memory of higher up units holds the data from the lower units. Endo teaches that the data from each memory unit is transferred into the memory of a higher up unit, and therefore is in the memory of a higher up unit at a second time (Figs. 2-6) (abstract; Column 4, Line 30 to Column 6, Line 65; Column 7, Line 28 to Column 8, Line 50). It would have been obvious to modify Zimmer to include transferring the data from the memory of the second pod to the memory of the first pod as taught by Endo in order to pass the signals along the network to the storage cartridge at the surface.

With regard to claim 117, Zimmer discloses that the second pod is transferred to the telemetry and control module, and is therefore disposed in the memory element of the telemetry and control module at a third point in time (Column 5, Line 54 to Column 8, Line 15).

Claims 118-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmer (5157392) in view of Downey as applied to claim 114 above, and further in view of Laborde (6529443).

With regard to claim 118, Zimmer and Downey disclose communications pathways between sensor modules including chokes and first and second nodes in each device. Zimmer and Downey do not disclose the use of switch elements to create

a bypass pathway that creates a third pathway between the telemetry and control module and the memories of the first and second sensor pods. Laborde teaches sensor nodes used in a wellbore, and teaches uses switches in between conductors carrying data and power signals and the nodes of successive communication units to create a bypass pathway between units (Figs. 4-6) (Column 2, Line 67 to Column 8, Line 38). It would have been obvious to modify Zimmer to include switch elements and bypass pathways between the pods as taught by Laborde in order to have alternative communications pathways in case of a communication failure or to communicate directly with only specific units.

With regard to claim 119, Downey teaches that each of the sensor units includes a first direct current block 39 electrically connected between the first node and the first communications converter and a second direct current block 39 connected between the second node and second communications converter (Column 3, Lines 13-50).

With regard to claim 120, Downey teaches that each sensor unit includes a power supply module 46 electrically connected to the choke (Column 3, Lines 32-50) (Fig. 1).

Conclusion

The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Hughes whose telephone number is 571-272-6983. The examiner can normally be reached on M-F 9:00am to 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SAH



EXAMINER
SUPERVISOR